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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,721	11/15/2001	Andrew Lennard Lewis	Q67271	7693

7590 12/08/2003

SUGHRUE MION, PLLC
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Washington, DC 20037-3213

EXAMINER

CHEUNG, WILLIAM K

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

0017

Office Action Summary	Application No. 09/987,721	Applicant(s) LEWIS ET AL.	
	Examiner William K Cheung	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 43-61, 63-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 and 62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3, 6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 62 is objected to because of the following informalities:

Claim 62 (line 1), the recitation "emulsion polymerization process according to claim 61" is objected because claim 61 is not related to a process. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 6, 8-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwa (US 3,497,482).

*The invention of claims 1-3, 5, 6, 8-18 relates to an **emulsion polymerization process** comprising the following steps:*

- a) providing a mixture of ethylenically unsaturated monomers including water insoluble monomer;*
- b) dispersing the mixture of ethylenically unsaturated monomers into an aqueous liquid to form an oil-in-water emulsion;*
- c) adding to the oil-in-water emulsion an ammonium phosphate ester zwitterionic monomer;*
- d) adding a water-soluble radical initiator to the oil-in water emulsion;*
- e) polymerizing the monomers to form a product latex of polymer having a polymer solids concentration in the product of at least 20% by weight.*

Hwa (col. 7, line 1-16) in example 10 discloses an emulsion polymerization process comprising the steps of providing a mixture of ethylenically unsaturated monomers which includes a water insoluble monomer, the monomer obtained in example 4, an ammonium phosphate ester zwitterionic monomer. Since the process of Hwa uses a water soluble radical initiator, ammonium persulfate and sodium metabisulphite, it would be apparent to one of ordinary skill in art to recognize that the disclosed process is pertained to an emulsion polymerization process which typically requires to disperse the monomer mixtures to form an oil-in-water emulsion. Therefore, the examiner has a reasonable basis to believe that the claimed "dispersing the mixture of ethylenically unsaturated monomers into an aqueous liquid to form an oil-in-water emulsion" is inherently possessed by Hwa.

Regarding the claimed "polymerizing the monomers to form a product latex of polymer having a polymer solids concentration in the product of at least 20% by weight", Hwa (col. 7, line 2-4) clearly indicates that the polymerization is loaded with 50% by weight of monomer. Further, Hwa (col. 7, line 13) indicates that the polymer yield is 32.2% or 64.4% of the theoretical yield. In view of the disclosure, Hwa clearly shows a polymerization process for producing a latex product having a polymer solids concentration of at least 20% by weight.

The difference between the disclosure of Hwa and the invention of claims 1-3, 5, 6, 8-18 is that Hwa is silent on the specific sequence of adding the ammonium phosphate ester zwitterionic monomer.

In view of the disclosure of Hwa, Hwa clearly demonstrated the importance of each of the processing steps as a whole for obtaining a copolymer comprising an ammonium phosphate ester zwitterionic monomer. Therefore, it would have been obvious to one of ordinary skill in art to recognize that the change in sequence of the monomer addition would be equally effective in producing a copolymer comprising an ammonium phosphate ester zwitterionic monomer.

Further, Because Hwa does not emphasize any criticality of the adding sequence in the processing steps, the examiner has a reasonable basis to believe that the claimed monomer adding sequence as claimed is also a non-critical inventive element

Art Unit: 1713

in the invention of claims 1-3, 5, 6, 8-18. In view of that the adding sequence is non-critical or non-essential inventive elements, *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.), the rearrangement of steps in a disclosed invention is considered obvious. Motivated by the expectation of success of producing a copolymer comprising an ammonium phosphate ester zwitterionic monomer, it would have been obvious to use the teachings in Hwa on the techniques of preparing an ethylene copolymer which include evaluating and rearranging the essential and non-essential steps of the process to obtain the present invention [see MPEP 2144.04]. To obtain a valid patent, applicants must submit "unexpected results" to show the criticality of drying of the supported catalyst component as claimed in claims 1-3, 5, 6, 8-18.

MPEP 2144.04

C. Changes in Sequence of Adding Ingredients

Ex parte Rubin, 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

Allowable Subject Matter

4. Claims 4, 7, 19-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowances

5. Claims 24-42 are allowed.
6. The following is an examiner's statement of reasons for allowance:

As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the closest prior art of Hwa (US 3,497,482) to render the present invention anticipated or obvious to one of ordinary skill in the art. Hwa is silent on a process which comprises the steps of forming a monomer seed mixture.

Art Unit: 1713

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (703) 305-0392. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (703) 308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-5885.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'William K. Cheung', with a long, sweeping horizontal line extending to the right.

William K. Cheung

Patent Examiner

November 26, 2003